



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,976	01/13/2002	Steven Teig	SPLX.P0084	3206

23349 7590 09/15/2003

STATTLER JOHANSEN & ADELI
P O BOX 51860
PALO ALTO, CA 94303

EXAMINER

SIEK, VUTHE

ART UNIT	PAPER NUMBER
----------	--------------

2825

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/047,976	Applicant(s) TEIG, STEVEN	
	Examiner Vuthe Siek	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-8 and 11-14 is/are rejected.
- 7) ☒ Claim(s) 4,5,9 and 10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to application 10/047,976 filed on 1/13/2002.

Claims 1-14 remain pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 6-8 and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Sarrafzadeh et al. (6,442,743).
4. As to claim 1, Sarrafzadeh et al. teach a method of pre-computing routes (placement and routing method by performing geometrically bounded FM referred to as an incrementally quadrisectioning or partitioning a region into a plurality of sub-regions by a set of partitioning lines (Figs. 1-18 and description). The method comprising defining a set of partitioning lines for partitioning the region into a plurality of sub-regions (bins) during a routing operation (partitioning using GBFM) (5, 8, 11-18); identifying a primary set of sub-regions that has more than one sub-region (defining a window encompassing a plurality of bins); determining whether the primary set of sub-regions is an open set that has a sub-region that is not adjacent to any other sub-region in the set; if the primary set of sub-regions is not an open set, identifying a route that connects the

sub-regions in the primary set; storing the identified route for the primary set of the sub-regions (as Sarrafzadeh et al. teach performing clustering to create top-clusters; it is noted that the clustering is done by gathering cells or nodes into clusters that are closely related and then placed the clusters or assigned into bins or sub-regions, further placement refinement is done by further partitioning the bins into smaller bins where few cells that are closely related being assigned or placed, then routing is performed; the smaller bins that are adjacent without open are used to placed cells or nodes and routed as shown in Fig. 16; the routes are then stored).

5. As to claims 2-3, Figs. 13-16 shown multiple routes that traverse the sub-regions in the primary set when the primary set of sub-regions is not an open set, where the routes are minimum trees (connections between cells or nodes bdfg, pnac, ehij and omkl formed minimum trees within bins or window of bins).

6. As to claims 6-8, remarks set forth in rejecting claims 1-3 equally apply rejecting claims 6-8. In addition, since Sarrafzadeh et al. teach repeating performing GBFM until each of the smaller bins contains a relatively small number gates that are closed connected (corresponding to the primary set of sub-regions is not an open set). The window encompassing smaller bins is not an open set (Figs. 15-16).

7. As to claims 11-14, Figs. 13-16 and 18 shown routing paths between sub-regions, edges between sub-regions and diagonal edges and paths.

Allowable Subject Matter

8. Claim 4-5 and 9-10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

Art Unit: 2825

limitations of the base claim and any intervening claims. The prior art of record does not teach or fairly suggest inventive steps as recited in claims 4 and 9.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (703) 305-4958. The examiner can normally be reached on M-F (6:30-4:00) 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (703) 308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Vuthe Siek
Primary Examiner
August 28, 2003



VUTHE SIEK
PRIMARY EXAMINER